DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

Bay Area Branch
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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 99.28

WELDING INSPECTION REPORT

Resident Engineer: Pursell, Gary
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-002222
Date Inspected: 23-Apr-2008

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: Japan Steel Works, Ltd.

OSM Arrival Time: 830
OSM Departure Time: 1630
Location: Muroran, Japan

CWI Name: Rory O'Kane

Inspected CWI report:	☐ Yes	☑ No	☐ N/A	**CWI Present:**	☑ Yes	☐ No	
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Rod Oven in Use:**	☐ Yes	☐ No	☑ N/A
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☑ Yes	☐ No	☐ N/A
				Approved WPS:	☑ Yes	☐ No	☐ N/A
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A

Bridge No: 34-0006
Component: Tower, Jacking and Deviation Saddles

Summary of Items Observed:

On this date OSM Quality Assurance Representative Daniel L. Reyes observed the testing and the inspections relative to the Saddle Castings and Procedure Qualification Record (PQR) Test Plate for this project. The following was observed:

Machine Shop # 4

At the start of the shift this QA inspector was escorted by Japan Steel Works, Ltd. (JSW) Deputy Manager Bridge Group Steel Products Department personnel Kazunori Sato to the JSW No. 4 Machine Shop where the machining of the saddle castings is being performed. This QA inspector observed that the layout for the rough machining was completed and the scheduling for the rough machining has not been determined as of this date. There were no other activities observed by this QA inspector relative to this project on this date.

Fabrication Shop # 4

Procedure Qualification Test Plate-SW-6

At the start of the shift this QA inspector observed the continued welding and inspection of the Procedure Qualification Record (PQR) test plate identified as SW-6. The welding was performed by Japan Steel Works, Ltd. welding personnel Kouzou Kobayashi ID 08-5023 with the 25 millimeter thick test plate placed in the flat (1G) position. Mr. Kouzou utilized the gas-shielded Flux Cored Arc Welding (FCAW-G) process as per the Welding Procedure Specification (WPS) SJ-2942 WP-9 which was also used by the Quality Control (QC) Inspector Rory O'Kane as a reference. The consumable utilized during the welding of the test plate was identified as a Hobart Electrode Tri-Mark product identified as TM55 with a diameter size of 1.6 millimeters which appeared to comply with the AWS A5.20 specification and the E70T-5MJ H4 Classification.

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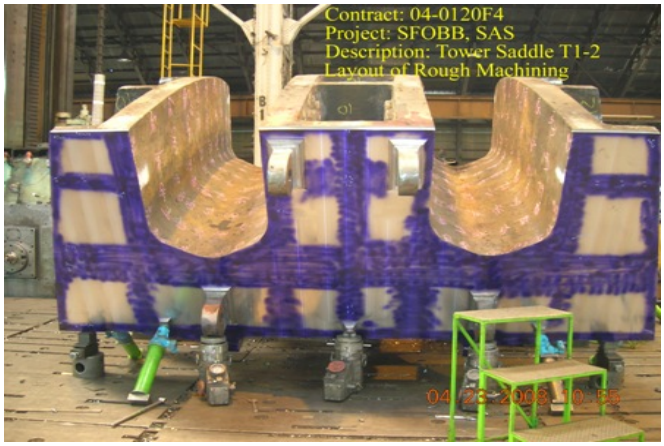
The QC inspector Mr. O'Kane verified the minimum preheat temperature of 110 degrees Celsius and at the conclusion of verifying the surface temperature the welder Mr. Kouzou commenced the welding of the root pass. At this time this QA inspector observed the QC inspector verifying the amperage, voltage and travel speed. The average welding parameters were observed by this QA inspector was as follows; 250 amps, 35.0 volts with a travel speed measured at 178 mm/m.

At the conclusion of welding the root pass and interpass cleaning the QC inspector Mr. O'Kane observed porosity in the root pass. At this time JSW Welding Engineer Takaaki Maruya proceeded and instructed the welder Mr. Kouzou to weld single passes utilizing a test piece. The Welding Engineer Mr. Takaaki adjusted the welding parameters which appeared not to rectify the issue of the porosity. At this time Mr. Takaaki checked the gas flow of the shielding gas and the supply hose for leaks which appeared not to be a contributing factor in regards to the porosity issue. At the conclusion of this process of elimination, Mr. Takaaki suspended the PQR testing and informed the QC inspector that it appears that the welding consumable was the contributing factor of the porosity issue. The re-scheduling of the PQR test plate will be determined at a later date.

The following digital photographs illustrate observations of the activities performed on this date.



Summary of Conversations:

There were general conversations with Japan Steel Works, Ltd. (JSW) Bridge Group Steel Products Department personnel Kunio Nagaya regarding the locations of inspection personnel.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Venkatesh Iyer, (858) 967-6363, who represents the Office of Structural Materials for your project.

Inspected By:	Reyes,Danny	Quality Assurance Inspector
Reviewed By:	Lanz,Joe	QA Reviewer